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[54] **SYSTEM AND METHOD FOR EXCHANGING DATA AND COMMANDS BETWEEN AN OBJECT ORIENTED SYSTEM AND RELATIONAL SYSTEM**

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[51] **Int. Cl.**<sup>7</sup> ..... **G06F 17/30**

[52] **U.S. Cl.** ..... **707/4; 707/6; 707/101; 707/103**

[58] **Field of Search** ..... **707/2, 3, 4, 101, 707/103, 6; 345/335, 968, 333, 349; 395/702; 711/1, 100; 364/280, 4**

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[57] **ABSTRACT**

A system for exchanging data and commands between an object oriented system and a relational system. The system includes an Object-Relational Mapping (ORM) grammar, an ORM specification, Object Class Definitions, a relational database, an operating system, a Database Exchange Unit including an OR mapping unit, a schema generator, a schema reverse engineering unit and applications. The ORM specification is based on the ORM grammar and includes information for defining the mapping between object-oriented system and the relational system. The Object Class Definitions define the object-oriented system, and the relational database defines the relational system. The Database Exchange Unit executes in accordance with the ORM specification, and is the programs/routines that operate to translate data from the object model to the relational model, and vice versa. The present invention further comprises a number of methods including: a method for generating a ORM Data Structures; a method for generating a mapping unit; a method for generating a schema from an object model and an object-relational mapping specification; a method for generating an Object Class Definitions and an ORM specification from an ORM template specification and database schema; and a method for object streaming, and methods for efficient generation of persistently unique sequence numbers for new objects.

**42 Claims, 26 Drawing Sheets**

Microfiche Appendix Included  
(1 Microfiche, 30 Pages)

